

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
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HANS HALLÉN et al.) Group Art Unit: (unassigned)
)
Application No.: (unassigned)) Examiner: (unassigned)
)
Filed: November 20, 2001)
)
For: SURFACE COATINGS)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please amend the above-identified Application, filed concurrently herewith, as indicated.

IN THE CLAIMS:

Kindly replace Claims 3, and 5 to 12 as follows:

3. (Amended) Material according to claim 1, wherein the powdered metallic material comprises less than 3.0 wt % iron.

5. (Amended) Material according to claim 1, wherein the powdered metallic material comprises 0.05-1.0 % by weight of a carbide forming element.

6. (Amended) Material according to claim 1, wherein the powdered metallic material comprises 1.0 - 5.0 % by weight of carbide forming element.

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7. (Amended) Material according to claim 1, wherein the powdered metallic material comprises 0.6 - 1.6 % boron and 1.6 - 3.5 % silicon.

8. (Amended) Material according to claim 1, wherein the powdered metallic material comprises 1.5 - 3.0 wt % phosphorous.

9. (Amended) Material according to claim 1, wherein the powdered metallic material comprises 0.01 - 0.5 % by weight of carbon.

10. (Amended) Material according to claim 1, wherein the powdered metallic material is a homogenous alloy.

11. (Amended) Material according to claim 1, wherein the powdered metallic material is a gas atomized powder or a water atomized powder.

12. (Amended) A method of forming wear resistant surface coating on a cast iron substrate, comprising the steps of

providing a nickel based powdered metallic material comprising in addition to nickel 0 - 4.5 % by weight of copper, 0-5.0 % by weight of iron, whereby the total amount of copper and iron is at least 2.5 % by weight, 0.05-5.0 % by weight of a carbide forming element, 0.5-2.0 % by weight of boron, 1.0-4.0 % by weight of silicon, 0.5-4.0 % by

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weight of phosphorus, 0.01-0.5 % by weight of C and less than 2 % by weight of inevitable impurities, and

applying and melting at least one layer of the powdered metallic material onto the substrate by means of thermal coating, whereby formation of carbide occurs on the surface of the substrate.

Kindly add the following new Claims 15 to 20:

15. (New) Material according to claim 2, wherein the powdered metallic material comprises less than 3.0 wt % iron.

16. (New) Material according to claim 2, wherein the powdered metallic material comprises 0.05-1.0 % by weight of a carbide forming element.

17. (New) Material according to claim 2, wherein the powdered metallic material comprises 1.0 - 5.0 % by weight of carbide forming element.

18. (New) Material according to claim 2, wherein the powdered metallic material comprises 0.6 - 1.6 % boron and 1.6 - 3.5 % silicon.

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19. (New) The method according to claim 12 wherein said substrate is preheated to a temperature in the range of 300-800°C prior to said applying and melting said at least one layer of the powdered metallic material onto the substrate.

20. (New) The method according to claim 1, wherein thermal coating includes the use of equipment providing a fusing temperature of 850-910°C.

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REMARKS

The present amendment modifies the claim format only and eliminates the use of multiple dependency.

An Information Disclosure Statement is being filed concurrently herewith.

The examination and allowance of the Application are respectfully requested.

Respectfully submitted,

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Marked-up Claims 3, and 5 to 12

3. (Amended) Material according to claim 1 [or 2 claim], wherein the powdered metallic material comprises less than 3.0 wt % iron.
5. (Amended) Material according to [any of the preceding claims] claim 1, wherein the powdered metallic material [preferably] comprises 0.05-1.0 % by weight of a carbide forming element.
6. (Amended) Material according to [any of the preceding claims] claim 1, wherein the powdered metallic material [preferably] comprises 1.0 - 5.0 % by weight of carbide forming element.
7. (Amended) Material according to [any of the preceding claims] claim 1, wherein the powdered metallic material [preferably] comprises 0.6 - 1.6 % boron and 1.6 - 3.5 % silicon.
8. (Amended) Material according to [any of the preceding claims] claim 1, wherein the powdered metallic material [preferably] comprises 1.5 - 3.0 wt % phosphorous.

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Marked-up Claims 3, and 5 to 12

9. (Amended) Material according to [any of the preceding claims] claim 1, wherein the powdered metallic material [preferably] comprises 0.01 - 0.5 % by weight of carbon [and preferably less than 0.3 % by weight].
10. (Amended) Material according to [any of the preceding claims] claim 1, wherein the powdered metallic material is a homogenous alloy.
11. (Amended) Material according to [any of the preceding claims] claim 1, wherein the powdered metallic material is a gas atomized powder or a water atomized powder.
12. (Amended) A method of forming wear resistant surface coating on a cast iron substrate, comprising the steps of
- providing a nickel based powdered metallic material comprising in addition to nickel 0 - 4.5 % by weight of copper, 0-5.0 % by weight of iron, whereby the total amount of copper and iron is at least 2.5 % by weight, 0.05-5.0 % by weight of a carbide forming element, 0.5-2.0 % by weight of boron, 1.0-4.0 % by weight of silicon, 0.5-4.0 % by weight of phosphorus, 0.01-0.5 % by weight of C and less than 2 % by weight of inevitable impurities,

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Marked-up Claims 3, and 5 to 12

[optionally preheating the substrate to a temperature in the range of 300-800 °C;]

and

applying and melting at least one layer of the powdered metallic material onto the substrate by means of thermal coating, whereby formation of carbide occurs on the surface of the substrate.

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